

# User benefits of Anaerobic Digestion

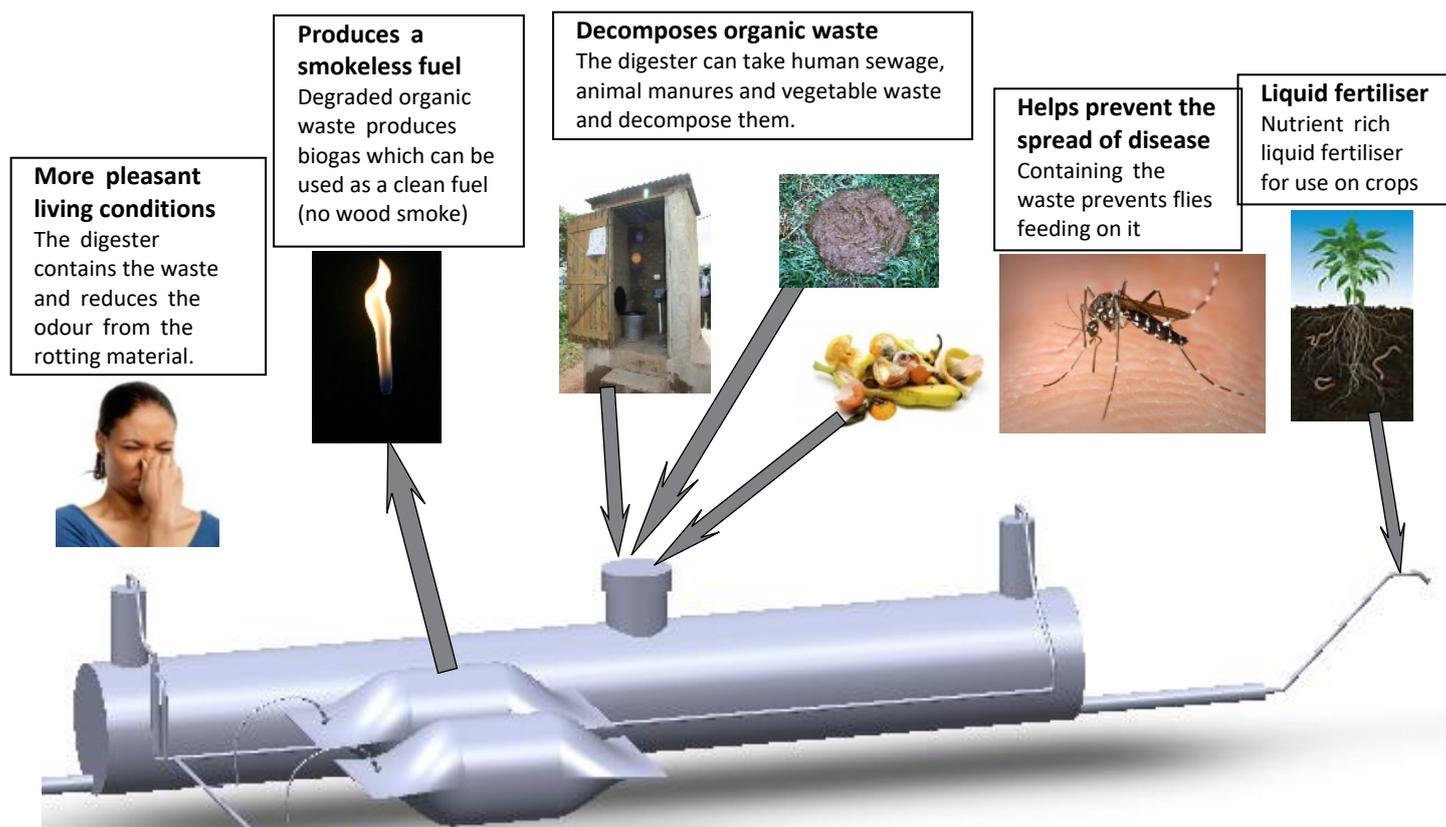


**SOWTech**

Sustainable OneWorld Technologies

Briefing Note: BN11

**Anaerobic digestion (AD) treats organic waste in an enclosed environment to produce a sustainable renewable energy source and a bio-fertiliser. It helps to prevent the spread of diseases through waste containment and treatment and can improved health by replacing smoke-generating open fires with biogas stoves.**



Sanitation is a basic human right but it remains a key health issue in the developing world. Over a third of the human population does not have access to adequate sanitation. The Flexigester is an innovative way to bring low cost sanitation in the form of anaerobic digestion to the people who need it. It allows waste to be collected and treated in a fully enclosed environment, close to the source of production.

Anaerobic digestion is currently used extensively in the developed world for sewage treatment. It can take many types of organic waste including human sewage, animal manures and vegetable waste and decompose them into a biogas and a nutrient rich digestate.

The waste is contained in an enclosed environment. Collecting the waste and disposing it within the digester removes the waste from being left in the open in streets and in water courses. This makes the local environment cleaner and more sanitary. The system is gas tight so no odours are given off during processing. Waste left in the open does generate foul odours as it decomposes.

By containing the waste, vectors, such as flies and mosquitos, are prevented from gaining access to the waste on which they would normally feed and breed. This reduces the potential for transmission of diseases. Also, the conditions inside the digesters are not conducive to the proliferation of disease spreading organisms.

The digester decomposes waste under controlled conditions in the absence of oxygen. One of the products of this decomposition is biogas, a mixture of gases predominantly composed of methane and carbon dioxide. The methane gas is combustible and can be used as a fuel replacing firewood, bottled gas or diesel. By producing this gas, the users are no longer required to spend time collecting firewood. Biogas is a clean fuel and it is much less damaging to health than a wood burner as it does not produce smoke. Biogas is clean, saves time and is sustainable.

Another product is a nutrient rich fertiliser that can be spread on land to supply essential nutrients to plants, improving crop growth and yield. The fertiliser is in liquid form which also helps to irrigate the crops and preserve water for other essential uses.